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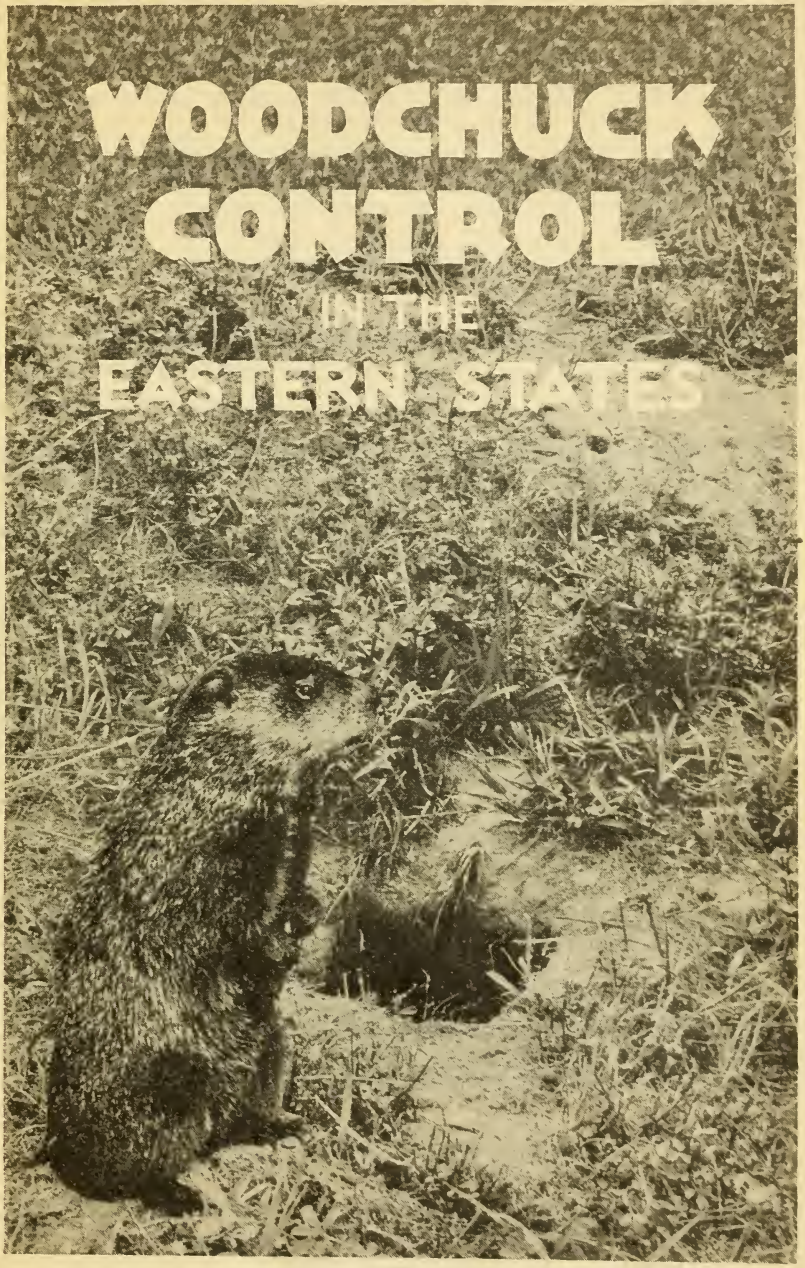
WOODCHUCK CONTROL IN THE EASTERN STATES



LEAFLET NO. 21

IN RECENT YEARS there has been a marked increase in the number of woodchucks in the Eastern and mid-Western States. In many places throughout this area where this animal was unknown a decade ago it is now a serious menace to crops, and the control of its depredations has become necessary. Complete extermination of the woodchuck is not justifiable, desirable, or practicable, but its destruction over limited areas is often essential to successful farming. This leaflet describes, along the following lines, effective methods of woodchuck control in the Eastern States:

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This leaflet is a contribution from the
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WOODCHUCK CONTROL IN THE EASTERN STATES

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Abundance of Woodchucks

THE EASTERN WOODCHUCK, or ground hog (*Marmota monax*) (fig. 1), occurs in all the States east of the Great Plains and north of northern Arkansas, Alabama, and North Carolina. It is more numerous and destructive throughout the northern than the southern part of this area and is particularly troublesome in the New England States, New York, Ohio, Michigan, Indiana, and Illinois. Although woodchucks are native to this region and have always been a nuisance there, a noted increase both in their number and in the extent of their range has been observed in recent years.

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Fig. 1.—The eastern woodchuck, or ground hog (*Marmota monax*). An interesting animal in its usual habitat in rocky hillsides, woodlands, and bramble thickets, removed from farming operations, but objectionable in cultivated areas

Much of the area newly invaded by woodchucks is purely agricultural (fig. 2), and many of these rodents are now burrowing in open fields far from their accustomed haunts in the protection of rocky hillsides, bramble thickets, rock fences, wood lots, and ravines. In such situations a large percentage of their food supply consists of cultivated crops, and for this reason their menace to agriculture is increasing. The factors contributing to this recent general increase are not fully known, but certainly a large number of farmers who had not seen a woodchuck up to 10 years ago are at present confronted with the necessity of seriously combating them as pests.

Nature of Damage by Woodchucks

WOODCHUCK damage is diverse and includes injury to growing and shocked corn, truck crops, young fruit trees, and poultry. Forage, however, is probably the crop most seriously damaged, clover, alfalfa, and other legumes are particularly attractive to woodchucks, and it has been observed that the rodents have followed plantings of soy beans as they have been moved from one field to another in crop rotation. In addition to the forage actually consumed, the crop is reduced by the burrowing habits of the animals. Their large mounds in the aggregate cover a considerable area, and in avoiding them the sickle bars of the mowers miss much of the adjacent vegetation.

The burrows are also a constant menace to the limbs of farm animals working in a field infested with woodchucks, as the deep, treacherous "back doors" of the burrows are often well hidden.

B32227

FIG. 2.—Woodchuck-gassing demonstration in an agricultural area typical of the country into which the rodent has been recently extending its activities

These burrows in other localities may become a more serious menace, causing cave-ins of railroad embankments and breaks in levee and ditch banks, with resulting disastrous flooding of crops and erosion of the soil. (Fig. 3.)

Gassing Woodchucks

THE surest practicable method of controlling woodchucks on the average farm of the Eastern States is to gas the animals in their burrows. Poisoning is a method employed in the Western States, and in the East it is usually successful in destroying a few individuals, but the percentage of the animals so killed is too small to warrant recommending control by poisoning in the East. Carbon disulphide and calcium cyanide when properly used are both effective in the fumigation of woodchuck burrows. At present the use of carbon disulphide is the less expensive of the two and, therefore, preferable. Gasoline and the exhaust gas from a gas engine are also used on small areas.

Burrows should be gassed only during the spring months, for at that season the woodchuck is active and keeps its burrow cleaned out almost daily. It is important for the protection of valuable fur animals and rabbits to distinguish the burrow of the woodchuck

from that of other burrowing animals. The work of the woodchuck may be recognized not only from its habit just mentioned of cleaning the burrow daily and from evidences of the consumption of vegetation near by, but also by the size and shape of the mound and the trails usually visible between mounds and leading out from them to feeding areas.

During winter months portions of woodchuck burrows are frequently occupied by rabbits, skunks, foxes, or other species, and fumigation at that time would result in the destruction of many harmless and useful animals. During the active season of woodchucks, however, they are not sociably inclined and not only resent intrusion of other animals, but are well equipped to prevent it, so that in April and May the chance of destroying other and valuable animals in a properly identified woodchuck burrow is negligible. (Fig. 4.) At this season also the short vegetation enables one readily to detect

B26913

FIG. 3.—Damage to levee and adjacent fields resulting from a woodchuck's burrowing in the wrong place. The rodent's tunnel had penetrated to the impounded waters, and farmers suffered serious losses from the break and the flooding and erosion of adjacent fields

burrows from a distance, and the animals are more concentrated than later in the summer, when the young woodchucks are forced out of the parental den to find homes of their own.

The young woodchucks, from three to seven in number, are born usually during April and spend their first four to six weeks within the home den. Protecting them, therefore, furnishes another reason for the adults' repelling any invasion of their burrows.

Using Carbon Disulphide

POUR about 1½ ounces, or 3 tablespoons, of carbon disulphide on a small wad of cotton, rags, waste, or other absorbent material, and throw or place it well down into the entrance of each used burrow. Close tightly the entrance to burrows immediately after treatment, using an inverted sod or a stone, and seal it with damp earth, taking care to prevent loose sand or dirt from falling upon the fumigant. The heavy carbon disulphide gas may not reach the extreme ends of the burrows in steep hillsides, where the nest is apt to be

above the entrance, or in a loose, gravelly, or rocky soil. In such situations better results can be obtained by exploding the charge. This is done by tossing a burning match into the burrow after the carbon disulphide has been inserted, and covering the entrance immediately after the explosion. Best results can be obtained when the soil is damp.

Caution.—Carbon disulphide is highly explosive and inflammable. Keep all fire away from it and do not smoke while using it. Before exploding treated burrows, remove the supply of carbon disulphide to a safe distance, and do not stand directly in front of the burrow during the explosion.

B26859

FIG. 4.—Excavating a gassed woodchuck burrow to determine whether other wild animals were being poisoned when operations were conducted during the season recommended—April and May. In 10 such excavations 14 woodchucks were found but no other species

Using Calcium Cyanide

PLACE about 1 ounce, or 1 rounded tablespoon, of crude calcium-cyanide dust as far down in each used burrow as possible. Use a long-handled spoon, or a spoon fastened to a stick for the purpose, and upset the dust in a small pile rather than scatter it down the burrow. Close the entrance with an inverted sod or other obstruction, taking care to keep loose sand or dirt from covering the powder. Calcium cyanide will give the best results in dry weather.

A portable foot-pump dust gun similar to that in wide use at present in rat control (fig. 5) may be employed in forcing the calcium cyanide into the burrow. The dust is pumped in at one entrance until it is seen to issue from another; then the holes should be closed, as above directed. This method requires only about half as much calcium cyanide as the spoon method, and if a large number of burrows are to be treated the material saved will more than pay the cost of the gun. As the dust gun is also a valuable aid in rat control, the purchase cost is often warranted for such additional use.

Caution.—Calcium cyanide is a virulent poison, and the gas given off (hydrocyanic-acid or prussic-acid gas) acts very rapidly when obtained in a lethal concentration. There is little danger, however,

to an intelligent person using this gas outdoors. Do not get any of the chemical in the mouth, and wash the hands after handling it. Do not open the cans or remove the contents except in the open air, and be careful to store it out of reach of irresponsible persons.

Antidotes.—If anyone is poisoned by calcium cyanide, have him inhale ammonia; apply cold water to his head and spine; give stimulant of 1 teaspoon of aromatic spirits of ammonia; administer artificial respiration.

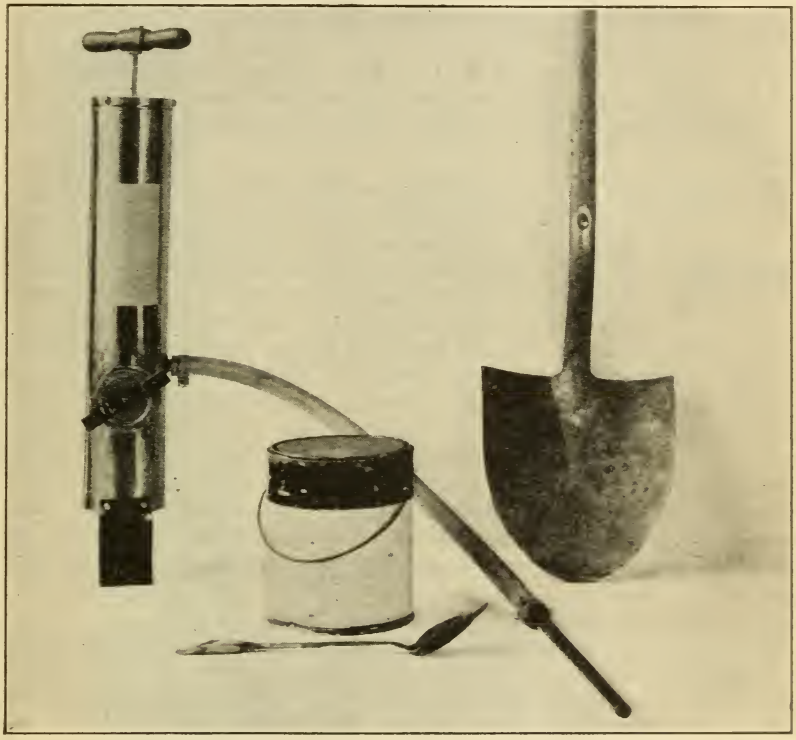

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FIG. 5.—A foot-pump dust gun, a supply of crude calcium-cyanide dust, a spoon for filling the dust gun, and a shovel for closing the holes are convenient equipment for treating large areas of woodchuck burrows

Using Gas-engine Exhaust

DIRECTING the exhaust of an automobile into a burrow by means of a hose is usually successful and practicable in gassing woodchucks when only a few readily accessible burrows are to be treated. The carburetor should be adjusted to provide a rich mixture, and the engine should be allowed to run at moderate speed for 10 or 15 minutes. Cover each hole from which smoke issues. Gasoline also may be used, but is less effective than any of the foregoing methods. The same procedure as for exploded carbon disulphide should be pursued, except that half a pint of the liquid should be exploded in each used burrow entrance.

Systematic Campaigns

Woodchucks depend for their safety on their ability to get into a burrow on short notice. They quickly reopen any closed burrows within their range, which sometimes extends as much as half a mile from the home den. One might readily suppose, therefore, that woodchuck fumigation has been unsuccessful where the burrows are found reopened shortly after having been gassed. Investigation in such cases usually shows that they have been opened from the outside. This suggests, and properly so, that it is necessary to treat systematically areas larger than those actually involved, in order to get permanent relief.

A good plan is to start early in April, when the burrows can be seen from a distance, divide the farm and adjacent infested areas into blocks or natural divisions, make a thorough search for used burrows, and then treat them all in one continuous operation. After one week a second survey should be made and any reopened burrows again treated.

Community Cooperation

An individual farmer working without the cooperation of his neighbors is compelled to carry on almost continuous gassing operations if he is to destroy the woodchucks that constantly move to his farm from adjacent premises. Should his neighbors on all sides join with him, however, in simultaneously destroying the woodchucks on the whole group of farms it would be much longer before another invasion of these rodents would occur from the outside. Still further protection would be gained, of course, if a greater number of farmers would unite in a cooperative campaign to free large areas of contiguous farm land. A community cooperative campaign, therefore, is highly desirable, and if carefully planned and systematically conducted it will be found the most efficient means of controlling woodchucks in farming communities. In addition, through cooperative effort, there is an important saving in eliminating the cost of repeated gassing of woodchuck burrows, and a further saving also is possible in the cooperative buying of fumigation supplies.

Bounties have been paid by counties in many sections in an effort to control woodchucks, but this method has not proved generally successful. It also usually results in a needless destruction of woodchucks in wooded sections, where the animals are of little or no economic importance, and thus the primary objective is defeated, which is to prevent woodchuck injury to cultivated crops. It has been shown by actual test in several counties that a small proportion of the funds required for the payment of bounties, when devoted to the purchase of supplies for gassing the woodchucks on purely farming areas, has resulted in a far greater saving of crops than has the bounty system.

Where the control of woodchucks on farming areas is necessary county agents or other agricultural workers should take the lead in perfecting the organization required for a systematic cooperative campaign. The Bureau of Biological Survey, through its leaders in rodent control, will assist in undertakings of this kind whenever possible, by demonstrating control methods and assisting in organizing and conducting campaigns.

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